

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing **See form PCT/ISA/210**  
(day/month/year)

Applicant's or agent's file reference <b>3011/18418 d/b</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below	
International application No. <b>PCT/EP2004/014050</b>	International filing date (day/month/year) <b>10.12.2004</b>	Priority date (day/month/year) <b>19.12.2003</b>	
International Patent Classification (IPC) or both national classification and IPC <b>B01J8/02, C10G49/00</b>			
Applicant <b>UHDE GMBH</b>			

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application  |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I      Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

Novelty (N)	Claims	3-10	YES
	Claims	1, 2	NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

**2. Citations and explanations:**

1) Reference is made to the following documents:

D1: US 2002/098136 A1

D2: EP 0 473 870 A

D3: US 4 741 885 A

D4: US 2 361 623 A

2) The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1 and 2 is not novel within the meaning of PCT Article 33(2).

Document D1 discloses a process for injecting oxygen into a reactor having essentially axial flow of the gas mixture through a catalyst bed (see reference number 4 in figure 1), with the oxygen being fed to a ring distributor system located above the catalyst bed and being ejected from a plurality of outlet openings in the ring distributor onto the catalyst surface at an oblique angle deviating from the vertical, namely in the direction of the centre of the reactor or in a tangential direction (see figures 2 and 3).

The subject matter of claims 1 and 2 is therefore not novel over D1.

Document D2 discloses a process and an apparatus for injecting oxygen into a reactor having essentially axial flow of the gas

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Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

mixture through a catalyst bed (see reference number 4 in figure 1), with the oxygen being fed to a distributor system located above the catalyst bed and being ejected from a plurality of outlet openings in the distributor onto the catalyst surface at an oblique angle deviating from the vertical, namely in a tangential direction (see figures 2 and 3).

In D2, the ring (see reference number 8 in figure 1, not described in more detail in D2) of the distributor does appear to be above the reactor, but the openings of the nozzles appear to be in the reactor, above the catalyst bed.

The subject matter of claims 1 and 2 is therefore not novel over D2.

3) The subject matter of independent claim 5 is novel over the documents of the prior art because none of these documents discloses a ring distributor comprising a plurality of concentric ring tubes with outlet openings above the catalyst bed. It is at present not clear whether this technical feature is an essential feature for defining the invention (see Box VIII) and how it contributes to an inventive step of the claim over D2 (closest prior art).

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Box No. VIII      Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1) In claim 1, a ring distributor system is used for injecting the oxygen-containing gas. In claim 5, the ring distributor system comprises a plurality of concentric ring tubes. It is at present not clear whether the embodiment of the plurality of concentric ring tubes is an essential feature for the definition of the invention which should be incorporated into claim 1 so that this meets the requirement of PCT Article 6 in conjunction with PCT Rule 6.3(b) that each independent claim must include all the technical features essential to the definition of the invention.